DELIVERING THE FUTURE OF COMPOSITE SOLUTIONS

PREPREGS
INTRODUCTION

Gurit’s long history supplying prepregs to the wind energy, transportation and marine industries has allowed Gurit to lead the way by introducing the next generation of prepregs, specifically designed to make component manufacture faster, easier and cheaper.

Pre-impregnated materials (prepregs) are reinforcement fibres or fabrics into which a pre-catalysed resin system has been impregnated by a machine. The resin systems in these materials react only very slowly at room temperature, allowing a long shelf life and are cured by heating them to the prescribed elevated temperature.

Gurit’s Prepreg offering is grouped into:

PERFORMANCE PREPREGS
High performance prepreg technology for the most demanding applications.

STRUCTURAL PREPREGS
Structural prepreg technology for faster, easier and cheaper large-scale composite components.

PREPREG PRODUCTS NAMING CONVENTION
Gurit’s comprehensive prepreg offering comprises of six main product groups aimed at out of autoclave processing:

¬ Epoxy Prepreg (SE or WE)
¬ SPRINT™ (ST or WT) Film Infusion Technology
¬ SparPreg™ UD Glass & Carbon Prepreg Solution
¬ Surfacing Films (SF)
¬ Film Adhesives (SA)
¬ Mono-component Pastes (SP)

WHAT ARE ESSENTIALS AND SPECIALIST PRODUCTS?

ESSENTIALS - Readily available recommended products
SPECIALIST - Application specific products available on request
## GURIT’S RANGE OF PERFORMANCE & STRUCTURAL PREPREGS

### PERFORMANCE

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>MAIN FEATURES</th>
<th>LOWEST CURL</th>
<th>FASTEST CURE</th>
<th>TOUCH- ENDED</th>
<th>RECOMMENDED PROCESSING METHOD</th>
<th>MAX Tg, BY DMA F/D</th>
<th>SHELF LIFE</th>
<th>3RD PARTY CERTIFICATIONS/QUALIFICATIONS</th>
<th>TYPICAL APPLICATIONS</th>
<th>RHEOLOGY</th>
<th>ANCILLARY PRODUCTS</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST 70 / SE 70</td>
<td><em>Curable at 35°C in thick sections</em>&lt;br&gt;Available in SPRINT™ and Prepreg formats&lt;br&gt;Range of compatible 35°C curing products</td>
<td>70</td>
<td>16</td>
<td>120</td>
<td>25</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>126</td>
<td>24</td>
<td>20 (ST), 28 (SE)</td>
<td>Germanischer Lloyd approved&lt;br&gt;- ISO 9001 certified&lt;br&gt;- ISO 14001 certified&lt;br&gt;- BSEN 9100 certified</td>
<td>Carbon Aramid E-Glass</td>
</tr>
<tr>
<td>SE 84LV</td>
<td>Versatile high-strength prepreg system&lt;br&gt;Curable at 80°C in thick sections&lt;br&gt;Available in SPRINT™ and Prepreg formats</td>
<td>80</td>
<td>12</td>
<td>120</td>
<td>60</td>
<td>Yes</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>115</td>
<td>24</td>
<td>60</td>
<td>Lloyd’s Register&lt;br&gt;- ISO 9001 certified&lt;br&gt;- ISO 14001 certified&lt;br&gt;- BSEN 9100 certified</td>
<td>Carbon Aramid E-Glass</td>
</tr>
<tr>
<td>ST 160</td>
<td>Ideal for structural out of autoclave applications&lt;br&gt;Rapid cure using out of autoclave processing&lt;br&gt;SPRINT™ technology ensures high quality laminates</td>
<td>140</td>
<td>4</td>
<td>180</td>
<td>15</td>
<td>Yes</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>165</td>
<td>12</td>
<td>8</td>
<td>Ideal for rapid manufacture of high quality structural components using out of autoclave processing</td>
<td>Carbon Aramid E-Glass</td>
</tr>
<tr>
<td>SE 200</td>
<td>Rapid cure using press moulding at 200°C&lt;br&gt;High Tg in excess of 200°C&lt;br&gt;Excellent mechanical performance</td>
<td>150</td>
<td>2</td>
<td>200</td>
<td>&lt;30</td>
<td>Pressed</td>
<td>210</td>
<td>18</td>
<td>60</td>
<td>Ideal for aerospace and automotive body and closure panel applications through a one step manufacture process</td>
<td>Carbon Aramid E-Glass</td>
<td>6</td>
</tr>
<tr>
<td>SC 110</td>
<td>White spot free high clarity resin for cosmetic parts&lt;br&gt;Versatile, high strength prepreg resin system&lt;br&gt;Flexible curing options at temperatures as low as 85°C</td>
<td>85</td>
<td>10</td>
<td>120</td>
<td>60</td>
<td>No</td>
<td>Autoclave Pressed</td>
<td>120</td>
<td>18</td>
<td>21</td>
<td>Ideal for high visual quality components without white- or white spots.</td>
<td>Carbon</td>
</tr>
<tr>
<td>Ph 301 / SE 300</td>
<td>Modified Cyanate Ester resin system&lt;br&gt;High Tg system with good moisture resistance&lt;br&gt;suited to a BMI resin substitution</td>
<td>125</td>
<td>120</td>
<td>35</td>
<td>30</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>300</td>
<td>6</td>
<td>15</td>
<td><del>ATS1000001&lt;br&gt;</del> FARE 25835 (FST)</td>
<td>Structures for high temperature applications such as engine cowling etc</td>
</tr>
<tr>
<td>PH 840</td>
<td>*Aromatic Free modified phenolic system&lt;br&gt;Improved vacuum bag processing surface finish&lt;br&gt;Adjustable tack</td>
<td>120</td>
<td>90</td>
<td>160</td>
<td>10</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>190</td>
<td>24</td>
<td>30</td>
<td>~ BS 6813 a104 (SR2, ST3)&lt;br&gt;~ LNE 2377-951&lt;br&gt;~ DI IN 1.5 (SA, SE, ST2)&lt;br&gt;~ NF M3101 (M, F1)</td>
<td>Ideal for monolithic or sandwich fire retardant structures and interior or exterior structural components</td>
</tr>
<tr>
<td>SE 84 Nano</td>
<td>*Nano-technology for outstanding mechanicals&lt;br&gt;Benefits from attributes of SE 84LV&lt;br&gt;Incorporates 3M™ Resin Matrix</td>
<td>80</td>
<td>12</td>
<td>120</td>
<td>60</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>140</td>
<td>24</td>
<td>60</td>
<td>High compressive property application e.g. High Performance yacht masts</td>
<td>Carbon Aramid E-Glass</td>
</tr>
<tr>
<td>SE 85</td>
<td>*Toughened resistant to micro-cracking&lt;br&gt;Available black pigmented</td>
<td>80</td>
<td>12</td>
<td>120</td>
<td>45</td>
<td>Yes</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>115</td>
<td>24</td>
<td>60</td>
<td>Ideal for structural components where improved impact resistance to micro-cracking is required</td>
<td>Carbon Aramid E-Glass</td>
</tr>
<tr>
<td>SE 85GT</td>
<td>*Highly toughened resistant to micro-cracking&lt;br&gt;Self-adhesive high peel strength</td>
<td>80</td>
<td>12</td>
<td>120</td>
<td>45</td>
<td>Highly</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>100</td>
<td>24</td>
<td>60</td>
<td>Ideal for structural components where excellent impact resistance to micro-cracking is critical</td>
<td>Carbon Aramid E-Glass</td>
</tr>
<tr>
<td>WE 91-1, WE 91-2</td>
<td>*High flow epoxy resin matrix&lt;br&gt;Available with a high (1) and medium (2) tack variant&lt;br&gt;Long ambient shelf-life - up to 2 months</td>
<td>85</td>
<td>12</td>
<td>120</td>
<td>60</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>120</td>
<td>18</td>
<td>60</td>
<td>Germanischer Lloyd approved&lt;br&gt;- ISO 9001 certified&lt;br&gt;- ISO 14001 certified&lt;br&gt;- BSEN 9100 certified</td>
<td>High volume industrial grade prepreg</td>
</tr>
<tr>
<td>WT 93</td>
<td>*High flow epoxy resin matrix&lt;br&gt;Dry fabric resin infusion enables efficient air evacuation&lt;br&gt;Suitable for automated lay-up</td>
<td>85</td>
<td>12</td>
<td>120</td>
<td>60</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>120</td>
<td>18</td>
<td>20</td>
<td>Germanischer Lloyd approved&lt;br&gt;- ISO 9001 certified&lt;br&gt;- ISO 14001 certified&lt;br&gt;- BSEN 9100 certified</td>
<td>High volume industrial grade SPRINT™ material</td>
</tr>
<tr>
<td>ST 94</td>
<td>*Drape and tackiness optimised for excellent handling&lt;br&gt;Ideal for complex or vertical mouldings&lt;br&gt;Excellent balance of mechanical performance and toughness</td>
<td>85</td>
<td>10</td>
<td>120</td>
<td>45</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>115</td>
<td>24</td>
<td>60</td>
<td>Germanischer Lloyd approved&lt;br&gt;- ISO 9001 certified&lt;br&gt;- ISO 14001 certified&lt;br&gt;- BSEN 9100 certified</td>
<td>Ideal for large structures where heavy-weight materials need to remain in the mould for long durations prior to curing.</td>
</tr>
<tr>
<td>ST 95</td>
<td>*Good balance of mechanical properties&lt;br&gt;Dry fabric resin infusion enables efficient air evacuation&lt;br&gt;Toughened resistant to micro-cracking</td>
<td>85</td>
<td>10</td>
<td>120</td>
<td>45</td>
<td>Yes</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>125</td>
<td>24</td>
<td>14</td>
<td>Germanischer Lloyd approved&lt;br&gt;- ISO 9001 certified&lt;br&gt;- ISO 14001 certified&lt;br&gt;- BSEN 9100 certified</td>
<td>High volume industrial grade toughened SPRINT™ material</td>
</tr>
<tr>
<td>SparPreP™</td>
<td>*UD prepreg ideal for thick structural sections&lt;br&gt;Excellent handling &amp; processing properties - no de-bulk&lt;br&gt;Focus compatible with Guri SPRINT™ and prepreg products</td>
<td>85</td>
<td>12</td>
<td>120</td>
<td>60</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>120</td>
<td>18</td>
<td>60</td>
<td>High quality monolithic unidirectional components that require fast single shot production in thick sections</td>
<td>Carbon Aramid R-Glass</td>
</tr>
<tr>
<td>Airstream</td>
<td>*Coating that can be applied to any prepreg for excellent handling and mould conformance even at 35°C&lt;br&gt;Extremely low void content in any thickness with de-bulk&lt;br&gt; Cure cycles can be optimised to use infusion grade tooling</td>
<td>85</td>
<td>12</td>
<td>120</td>
<td>60</td>
<td>No</td>
<td>Autoclave Pressed Vacuum Bagging</td>
<td>120</td>
<td>18</td>
<td>60</td>
<td>Germanischer Lloyd approved&lt;br&gt;- ISO 9001 certified&lt;br&gt;- ISO 14001 certified&lt;br&gt;- BSEN 9100 certified</td>
<td>Ultra low void content, high quality, monolithic components manufactured in ambient conditions up to 35°C without de-bulk.</td>
</tr>
</tbody>
</table>
ST 70
Low Temperature
Epoxy SPRINT™

- Long out-life - up to 4 weeks @ 18-22°C
- Excellent surface finish
- Range of compatible adhesive films and ancillary products
- Suitable for vacuum bag, press or autoclave consolidation
- Low temperature 70°C curing. Faster cycle times at elevated temperature

INTRODUCTION
Gurit’s ST 70 is a hot melt, low temperature cure, epoxy prepreg system. It has been developed for use in the construction of large components using low energy cure cycles. Excellent properties can be achieved with a processing temperature of just 70°C. At this cure temperature the system exhibits very good mechanical properties and excellent toughness.

Cure temperature for a 16 hours cure cycle is 70°C - this temperature allows less expensive tooling and ovens to be used, with lower thermal movement and distortion. Faster cures are available from higher cure temperatures. However, thicker sections (>10mm) will require the insertion of a suitable dwell into the cure cycle. Up to 20mm thick laminates may be moulded at 70°C with a peak exotherm only slightly above the cure temperature.

TYPICAL APPLICATIONS
ST 70 is widely used in sandwich structures with honeycomb, foam and balsa cores, primarily with the toughened SA 70 Adhesive Film.

SE 70
Low Temperature
Epoxy SPRINT™

- Award winning SPRINT™ matrix
- Zero volatile/solvent content
- Controllable in thick sections
- Excellent laminate quality, low bleed

INTRODUCTION
SE 70 is a toughened epoxy prepreg system. It is used in sandwich structures with honeycomb, foam and balsa cores, primarily with the toughened SA 70 Adhesive Film.

TYPICAL APPLICATIONS
SE 70 is widely used in sandwich structures with honeycomb, foam and balsa cores, primarily with the toughened SA 70 Adhesive Film.

ST 160
Out of Autoclave
SPRINT™ Technology

- Ideal for structural out of autoclave applications
- Excellent handling, drape and mould conformance
- Fast Lay-up times

INTRODUCTION
ST 160 is a high flow, low tack epoxy prepreg ideally suited to the manufacture of thick sections. ST 160 SPRINT™ technology can be cured using compression moulding or vacuum bag processing and offers a flexible cure envelope of just 15 minutes at 165°C. This unique product provides technically and commercially competitive engineering materials, ideal for use either solely, or in conjunction with other Gurit products from within the range.

TYPICAL APPLICATIONS
ST 160 is ideal for rapid manufacture of high quality structural components out of autoclave processing.

SE 84LV
Toughened Epoxy Prepreg

- Curable at temperatures as low as 80°C
- Versatile, high-strength prepreg system
- Can be processed with vacuum-only processing
- Low viscosity - Ideal for use with heavy fibre weights

INTRODUCTION
SE 84LV is an exceptionally versatile hot-melt, epoxy prepreg. It can be cured at temperatures as low as 80°C, or for faster moulding of components at 120°C. This is achieved with an extremely good out-life of up to 8 weeks at 18-22°C. SE 84LV is a toughened system, and offers excellent mechanical properties on a wide variety of reinforcing fabrics and fibres and is commonly used in vacuum bagging, press-moulding, autoclave and other pressure moulding processes. SE 84LV is a toughened epoxy prepreg system with heavy fibre weights where low-flow processing conditions (vacuum bag pressure and minimum cure temperature) are likely to be used. With its high compressive strength it is widely used in large heavily loaded components, such as yacht hulls, and spars.

TYPICAL APPLICATIONS
SE 84LV has been selected for use by various America’s Cup syndicates and boats racing in the Volvo Ocean Race. SE 84LV is widely used in sandwich structures with honeycomb, foam and balsa cores, primarily with the toughened SA 80 Adhesive Film.
**SE 200**  
200°C Tg Structural Prepreg

- Excellent handling, drape and mould conformance
- Excellent mechanical performance
- Fast, flexible curing options
- Suitable for compression moulding, autoclave or vacuum bag processing
- Achieves a Tg > 200°C after press curing in 15 minutes at 195°C
- Excellent hot-wet performance

**INTRODUCTION**

SE 200 is a high strength toughened epoxy system that has a flexible cure envelope ranging from 135°C to 200°C.

SE 200 has been developed to enable rapid part manufacture through a number of composite processing methods. The minimum cure temperature is 195°C from which SE 200 develops a Tg and mechanical properties associated with higher temperature curing systems. Higher temperature cures in excess of 180°C will achieve the best dry and wet thermal performance. Using the appropriate press moulding technology it is possible to achieve a 15 minutes hot-in/hot-out cure at 195°C, making SE 200 suitable for the economic production of automotive parts.

**TYPICAL APPLICATIONS**

SE 200 structural prepreg can be used in the making of parts such as structural lower tubs, bulkheads, front and rear scuttles, gearbox tunnels and other structural components.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 hour cure at 120°C</td>
<td>Ultra high clarity</td>
</tr>
</tbody>
</table>

**SC 110**  
Cosmetic Carbon Prepreg

- Ultra high clarity – ideal for cosmetic components with no white-wash or spots
- High-strength prepreg system
- Versatile process window with autoclave and press moulding
- Curable at temperatures as low as 80°C
- Fast 1 hour cure at 120°C
- Rapid 10 minute cure at 150°C in a press
- Excellent tack allowing easy in-mould repositioning

**INTRODUCTION**

SC 110 is a new cosmetic grade prepreg that utilises a high clarity, versatile, hot-melt epoxy resin formulation.

The unique formulation ensures that no dicy white-wash or spots are evident in the cured resin. It is ideal for manufacturing high visual quality components using autoclave and press moulding. It can be cured at temperatures as low as 80°C, or it can be used for faster moulding of components at 120°C. An even faster cure of 10 mins at 150°C can also be achieved using the appropriate press moulding technology. This is achieved whilst maintaining a good out-life of up to 3 weeks at 21°C. It is a toughened system, and offers excellent mechanical properties on a wide variety of reinforcing fabrics and fibres.

**TYPICAL APPLICATIONS**

Gurti’s SC 110 is suitable for automotive, marine and other markets where a high clarity finish is required.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 hour cure at 120°C</td>
<td>Ultra high clarity</td>
</tr>
</tbody>
</table>

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**PN 901/SE 300**  
High Temperature Cyanate Ester Prepreg

- Achieves a Tg > 200°C after a cure temperature of 135 to 180°C
- Can achieve a Tg > 300°C after a post-cure temperature of 180 to 300°C
- Ideal for components exposed to high temperatures for short durations
- Low moisture absorption with high temperature wet performance
- Good mechanical properties within large temperature range
- Self-extinguishing and low smoke emission
- Easy handling and drape-ability (good tack life)
- Long shelf and shop life

**INTRODUCTION**

PN 901/SE 300 is an ideal prepreg resin for high temperature composite applications, as it combines the ease of processing and handling convenience of epoxy resins, high temperature stability of polyimides, and flame and fire resistance of phenolics.

A 120°C cure for 75 minutes combined with a post-cure, enables PN 901/SE 300 to generate a Tg in excess of 300°C, making PN 901/SE 300 ideal for applications in composite structures, which are exposed to very high temperatures for short durations. The flame and smoke characteristics of PN 901/SE 300 composites show that this resin possesses superior flame retardant properties and holds a wide range of Aerospace grade FST (Fire/Smoke/Toxicity) standards.

**TYPICAL APPLICATIONS**

Structures for high temperature applications such as engine cowlings.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long shelf and shop life</td>
<td>Excellent FST behaviour</td>
</tr>
</tbody>
</table>

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**PH 840**  
Phenolic Prepreg  
Resin System

- Available with heavy-weight woven S and R glass
- Halogen-free Phenolic Prepreg Resin System
- Excellent mechanical behaviour
- Ideal for press moulding large flat components
- Long shelf and shop life
- Excellent FST behaviour
- Good surface finish
- Short curing time 10 min at 160°C

**INTRODUCTION**

PHG 8400 is a halogen-free modified phenolic system, designed for laminate with bright colour and good surface quality. This prepreg material has been developed for industrial, rail and ballistic applications with high specific mechanical properties and excellent FST (low heat-release and smoke-density) behaviour. The resin matrix PHG 8400 can be cured at a temperature range between 120°C / 250°F and 160°C / 320°F. Monolithic and sandwich structures can be easily manufactured with this prepreg. The curing can be performed by press, vacuum and autoclave moulding with a pressure of at least 1 bar.

**TYPICAL APPLICATIONS**

Ideal for monolithic or sandwich structures and exterior or interior structural components.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long shelf and shop life</td>
<td>Excellent FST behaviour</td>
</tr>
</tbody>
</table>

---

**Resin System**

- Resin System
- Available with heavy-weight woven S and R glass
- Halogen-free Phenolic Prepreg Resin System
- Excellent mechanical behaviour
- Ideal for press moulding large flat components
- Long shelf and shop life
- Excellent FST behaviour
- Good surface finish
- Short curing time 10 min at 160°C

**INTRODUCTION**

PN 910/SE 300 is an ideal prepreg resin for high temperature composite applications, as it combines the ease of processing and handling convenience of epoxy resins, high temperature stability of polyimides, and flame and fire resistance of phenolics.

A 120°C cure for 75 minutes combined with a post-cure, enables PN 910/SE 300 to generate a Tg in excess of 300°C, making PN 910/SE 300 ideal for applications in composite structures, which are exposed to very high temperatures for short durations. The flame and smoke characteristics of PN 910/SE 300 composites show that this resin possesses superior flame retardant properties and holds a wide range of Aerospace grade FST (Fire/Smoke/Toxicity) standards.

**TYPICAL APPLICATIONS**

Structures for high temperature applications such as engine cowlings.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long shelf and shop life</td>
<td>Excellent FST behaviour</td>
</tr>
</tbody>
</table>

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**PHG 8400**  
Halogen-free Modified Phenolic System

- Available with heavy-weight woven S and R glass
- Excellent mechanical properties
- Ideal for press moulding large flat components
- Long shelf and shop life
- Excellent FST behaviour
- Good surface finish
- Short curing time 10 min at 160°C

**INTRODUCTION**

PHG 8400 is a halogen-free modified phenolic system, designed for laminate with bright colour and good surface quality. This prepreg material has been developed for industrial, rail and ballistic applications with high specific mechanical properties and excellent FST (low heat-release and smoke-density) behaviour. The resin matrix PHG 8400 can be cured at a temperature range between 120°C / 250°F and 160°C / 320°F. Monolithic and sandwich structures can be easily manufactured with this prepreg. The curing can be performed by press, vacuum and autoclave moulding with a pressure of at least 1 bar.

**TYPICAL APPLICATIONS**

Ideal for monolithic or sandwich structures and exterior or interior structural components.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long shelf and shop life</td>
<td>Excellent FST behaviour</td>
</tr>
</tbody>
</table>
**SE 84 Nano**

High Performance Prepreg

- Developed for applications where compressive performance is key
- Utilises Nanotechnology for outstanding mechanical properties when vacuum-bag or press-moulded
- Extremely low exotherm in thick sections
- Excellent Tg generation
- Controlled flow
- Incorporating 3M™ Matrix Resin
- Performance combined with handling & processing attributes of SE 84LV

**INTRODUCTION**

SE 84 Nano is a high performance hot-melt epoxy prepreg. When vacuum bag moulded SE 84 Nano exhibits a 20% increase in compressive strength compared to SE 84LV through a combination of Gurit proprietary formulation technology and 3M™ Matrix Resin. This marriage of technology delivers a significant boost to mechanical properties with the cure and handling characteristics of SE 84LV. When pressure moulded compressive strength increases by up to 25% compared to SE 84LV.

**TYPICAL APPLICATIONS**

High compressive property application eg Very High Performance yacht masts.

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**SE 85**

Epoxy Prepreg System

- Rubber toughened system - good resistance to microcracking
- High flow
- Good surface finishes possible

**INTRODUCTION**

The SE 85 series are toughened hot-melt, epoxy prepregs that offers an extremely good balance of mechanical properties. They are ideal for structural components where improved impact performance and resistance to resin microcracking is desired. SE 85 can be cured at 80°C, yet retains an outlife of up to 56 days at 23°C. With its 45min cure at 120°C, it is also suitable for the quick manufacture of parts, and is also used in the development of trial components.

**TYPICAL APPLICATIONS**

Ideal for structural components where excellent impact resistance to micro-cracking is critical.

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**SE 85GT**

Epoxy Prepreg System

- Highly impact resistant
- Rubber toughened system - excellent resistance to micro-cracking
- Controlled flow
- Good surface finishes possible
- Self adhesive - high peel strengths

**INTRODUCTION**

SE 85GT has medium flow characteristics, so that heavy reinforcements can be easily wet out, and good consolidation can be achieved in very thick (>25mm) laminates, under just vacuum bag pressures. Its flow behaviour also means that it can produce excellent surface finishes when used in pressure-moulded components.

**TYPICAL APPLICATIONS**

Ideal for structural components where excellent impact resistance to micro-cracking is critical.

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**WE 91-1 / WE 91-2**

High flow epoxy prepregs

- High flow epoxy resin matrix
- High (WE 91-1) and medium (WE 91-2) tack prepreg
- Long ambient shelf-life - up to 2 months

**INTRODUCTION**

Gurit’s WE 91 prepreg product range comprises of two tack variants; WE 91-1 high tack and WE 91-2 medium tack prepregs. WE 91 is a high flow epoxy prepreg ideally suited to structural composite component manufacture. It can be cured at temperatures as low as 85°C / 185°F, but can also be used for the rapid manufacture of components through its 45-minute cure at 120°C / 250°F. All of this can be achieved together with an outlife of 60 days at 21°C / 70°F. WE 91-1 is designed for vacuum bag processing and offers excellent mechanical performance on glass and carbon fibre reinforcements.

**TYPICAL APPLICATIONS**

Technically and commercially competitive engineering materials.
WT 93
Low tack epoxy SPRINT™

- WT 93 low tack SPRINT™ resin matrix
- Good out-life at 21°C / 70°F
- Cure from 85°C - 120°C / 185°F - 250°F

INTRODUCTION
WT 93 is part of Gurit’s comprehensive offering of structural composite product solutions comprising of 3 main product groups; Prepreg, SPRINT™ and SparPreg™. This unique product range provides technical and commercially competitive engineering materials, ideal for use either solely, or in conjunction with other Gurit products from within the range. WT 93 can be cured at temperatures as low as 85°C / 185°F, but can also be used for the rapid manufacture of components through its 45-minute cure at 120°C / 250°F. All of this can be achieved together with an out-life of 60 days at 21°C / 70°F.  WT 93 is designed for vacuum bag processing and offers excellent mechanical performance on glass and carbon fibre reinforcements.

TYPICAL APPLICATIONS
Gurit’s innovative WT 93 SPRINT™ product range uses a high flow, low tack epoxy prepreg ideally suited to the manufacture of thick sections such as turbine blade roots or spars.

ST 94
Single-sided SPRINT™

- Drape and tackiness optimised for excellent handling
- Ideal for complex or vertical mouldings
- Excellent balance of mechanical performance and toughness

INTRODUCTION
ST 94 is a tough hot-melt, epoxy resin that offers an extremely good balance of mechanical properties. It has been formulated to give an ideal tack level at workshop temperature. It is ideal for structural components where improved impact performance and resistance to resin microcracking is desired.

TYPICAL APPLICATIONS
Ideal for large structures where heavyweight materials need to remain in the mould for long durations prior to curing.

ST 95
Toughened Structural SPRINT™

- Extremely low void content
- Good tack
- No debulk necessary between plies

INTRODUCTION
ST 95 is a toughened hot-melt, epoxy resin that offers an extremely good balance of mechanical properties. It has been specially formulated to maximise the outlife of SPRINT™ products at room temperature. It is ideal for structural components where improved impact performance and resistance to resin microcracking is desired.

TYPICAL APPLICATIONS
Ideal for making general, structural items for automotive, marine and industrial applications.

ST 95 is a toughened hot-melt, epoxy resin that offers an extremely good balance of mechanical properties. It has been specially formulated to maximise the outlife of SPRINT™ products at room temperature. It is ideal for structural components where improved impact performance and resistance to resin microcracking is desired.

TYPICAL APPLICATIONS
Ideal for structural components where improved impact performance and resistance to resin microcracking is desired.
GURIT’S RANGE OF ANCILLARY PRODUCTS

<table>
<thead>
<tr>
<th>PRODUCT NAME</th>
<th>MAIN FEATURES</th>
<th>TYPICAL APPLICATIONS</th>
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| SP 11100, SP 4832, SP 4202, SP 9435 | Monocomponent Fillers | - Co-curcable with prepreg systems  
- Compatible with handling and processing  
- Ideal for core splicing and gap filling |

**INTRODUCTION**

SP 11100 - for use with 70°C Prepreg systems  
SP 4832 - for use with 80°C Prepreg systems, low density  
SP 4202 - for use with 80°C Prepreg systems, high density  
SP 9435 - for use with 85°C Prepreg systems, high density for high temperature applications

**TYPICAL APPLICATIONS**

Core splicing for use with 70°C - 85°C Prepreg systems

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**SA 70**

Toughened Epoxy Film Adhesive

- Low temperature cure  
- Compatible with SE 70 prepregs  
- Controlled flow for maximum bond integrity  
- Designed for bonding prepreg skins to honeycomb and certain foam cores

**INTRODUCTION**

SA 70 is a film adhesive that is designed for secondary bonding, core-bonding and for co-curing with the range of Gurit prepregs. It can be cured at temperatures as low as 70°C, or can be more quickly cured at temperatures above 120°C. The product has an out-life of 28 days.

**TYPICAL APPLICATIONS**

Suitable for bonding aluminium or foam cores in conjunction with SE 70 prepreg or Ampreg laminating systems.

**PACK SIZES & AVAILABILITY**

SA 70 is available in 150, 250 and 400g resin films with or without* a glass carrier. Standard roll width is 1270mm and roll lengths vary between 63.5 and 127 sqm. Please check availability with your Customer Support representative.

* 150 and 250g only
### SA 80
**Toughened Epoxy Film Adhesive**

- **Low temperature cure**
- **Designed for bonding prepreg skins to honeycomb and certain foam cores**
- **Controlled flow for maximum bond integrity**
- **Toughened for impact resistance and peel strength**

**INTRODUCTION**
SA 80 is a film adhesive that is designed for secondary bonding, core-bonding and for co-curing with the range of Gurit prepregs. It can be cured at temperatures as low as 80°C, or can be more quickly cured at temperatures above 120°C. It has an out-life of 56 days at room temperature.

**TYPICAL APPLICATIONS**
Suitable for bonding aluminium or foam cores in conjunction with SE 84, SE 85 & SE 90 prepreg or Ampreg laminating systems.

**PACK SIZES & AVAILABILITY**
SA 80 is available in 150, 250 and 400g resin films with or without* a glass carrier. Standard roll width is 1270mm and roll lengths vary between 63.5 and 127 sqm. Please check availability with your Customer Support representative.

*150 and 250g only

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### SF 70
**Toughened Surfacing Film**

- **Toughened System**
- **Protects underlying laminate**
- **Reduction in surface film-laminate interfacial voids**
- **Improved resistance to water ingress**
- **Suitable for post painting**

**INTRODUCTION**
SF 70 surfacing material is a light green, toughened, epoxy film designed to enhance the surface finish of moulded composite components. It allows a good surface finish to be obtained by vacuum-bag moulding processes. It can be used directly against a suitably release treated mould surface, with prepreg or SPRINT™ plies laid up behind it. When fully cured with SPRINT™ or prepreg, SF 70 forms a stable tough surface which can be sanded in preparation for painting. The epoxy system is supplied ready impregnated into a supporting medium and ready catalysed, requiring only a moderate temperature cure.

**TYPICAL APPLICATIONS**
Co-cure with 70°C prepregs for resin rich surface.

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### SF 95
**Abrasion-Resistant Surfacing Film**

- **Easy to sand**
- **Reduction in surface film-laminate interfacial voids**
- **Improved resistance to water ingress**
- **Stable surface up to 115°C (depending on cure)**

**INTRODUCTION**
The patent-pending SF 95 surfacing material is a grey filled, sandable epoxy film designed to enhance the surface finish of moulded composite components. It allows a Class A surface finish to be obtained by vacuum-bag moulding processes. It can be used directly against a suitably release treated mould surface, with prepreg or SPRINT™ plies laid up behind it. When fully cured with SPRINT™ or prepreg, SF 95 forms a stable sandable surface which, once lightly sanded to provide a key for painting, greatly reduces print through of the underlying laminate. The epoxy system is supplied ready impregnated into a supporting medium and ready catalysed, requiring only a moderate temperature cure.

**TYPICAL APPLICATIONS**
Co-cure with 85°C prepregs for resin rich surface.
SF 95PF
Sandalable Surfacing Film

- Easy to sand
- Reduction in surface film-laminate interfacial voids
- Improved resistance to water ingress
- Significant reduction in print-through
- Improved opacity
- Stable surface up to 125°C (depending on cure)

INTRODUCTION
SF 95PF surfacing material is an epoxy film designed to enhance the surface finish of moulded composite components. It allows a good surface finish to be obtained by vacuum-bag moulding processes. It can be used directly against a suitably release treated mould surface, with prepreg or SPRINT™ plies laid up behind it. When fully cured with SPRINT™ or prepreg, SF 95PF forms a stable sandable surface which, once lightly sanded to provide a key for painting, provides a pin-hole free laminate. The epoxy system is supplied ready impregnated into a supporting medium and ready catalysed, requiring only a moderate temperature cure.

TYPICAL APPLICATIONS
Co-cure with 85°C prepregs for resin rich surface ideal for sanding / priming prior to painting.

SF 95VH
Abrasion-Resistant Surfacing Film

- Hard protective coating
- Reduction in surface film laminate interfacial voids
- Improved resistance to water ingress
- Increases surface longevity by up to 300%
- Improved opacity
- Improved health and safety - Diuron-free

INTRODUCTION
SF 95VH surfacing material is a very hard, abrasion-resistant epoxy film. It is designed to protect vulnerable underbody components from damage caused by foreign objects. Typical applications include inner wings, and front wheel diffusers. SF 95VH can be used directly against a suitably release treated mould surface, with prepreg or SPRINT™ plies laid up behind it, or as a final layer in the mould. It can be cured with vacuum only processing. Due to abrasion-resistance of this material, it would not be usual to apply a paint finish. The epoxy system is supplied ready impregnated into a supporting medium and ready catalysed, requiring only a moderate temperature cure.

TYPICAL APPLICATIONS
Ideal for applications that require a highly toughened system such as car body undertrays.

TECHNICAL INFORMATION AND PRICING
For more detailed information on performance and structural prepreg materials, as well as the complete Gurit product portfolio, please visit: www.gurit.com to view the following:

- Product Data Sheets
- ‘How to’ Videos
- News / Case Studies
- Composite Guides
- Events Schedules
- Representatives Contact Details
- Product Brochures
- Corporate Videos

For pricing or other enquiries, please contact contact@gurit.com

www.gurit.com

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Case Studies